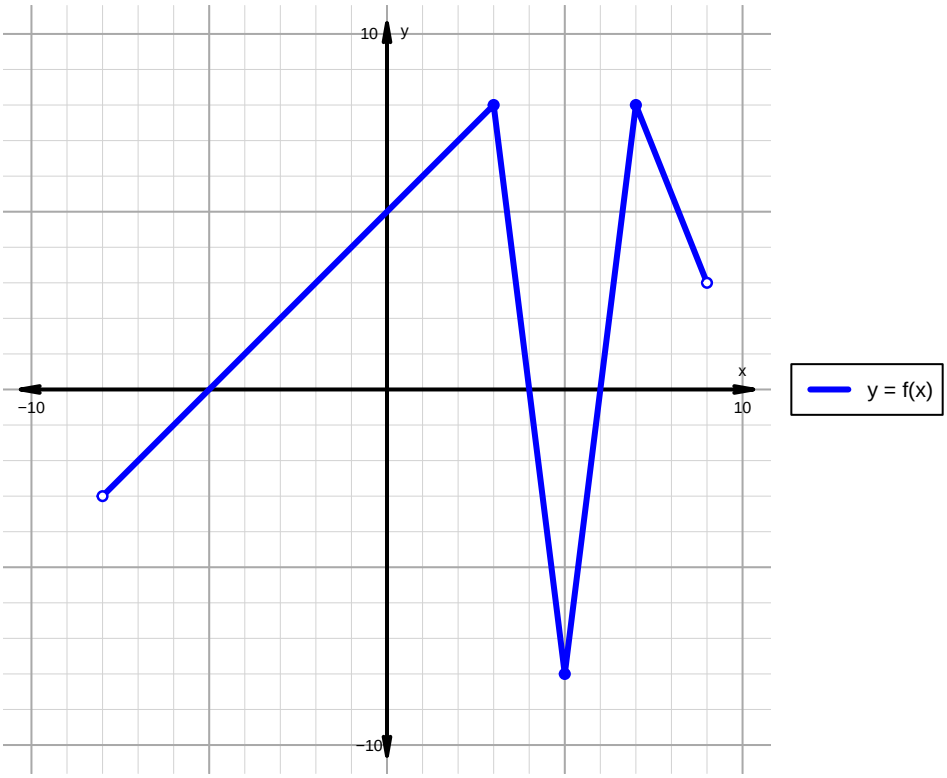
Name: Date:

Intervals, Transformations, and Slope Solution (version 101)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-5, 4) \cup (6, 9)$
Negative	$(-8, -5) \cup (4, 6)$
Increasing	$(-8, 3) \cup (5, 7)$
Decreasing	$(3, 5) \cup (7, 9)$
Domain	$(-8, 9)$
Range	$(-8, 8)$

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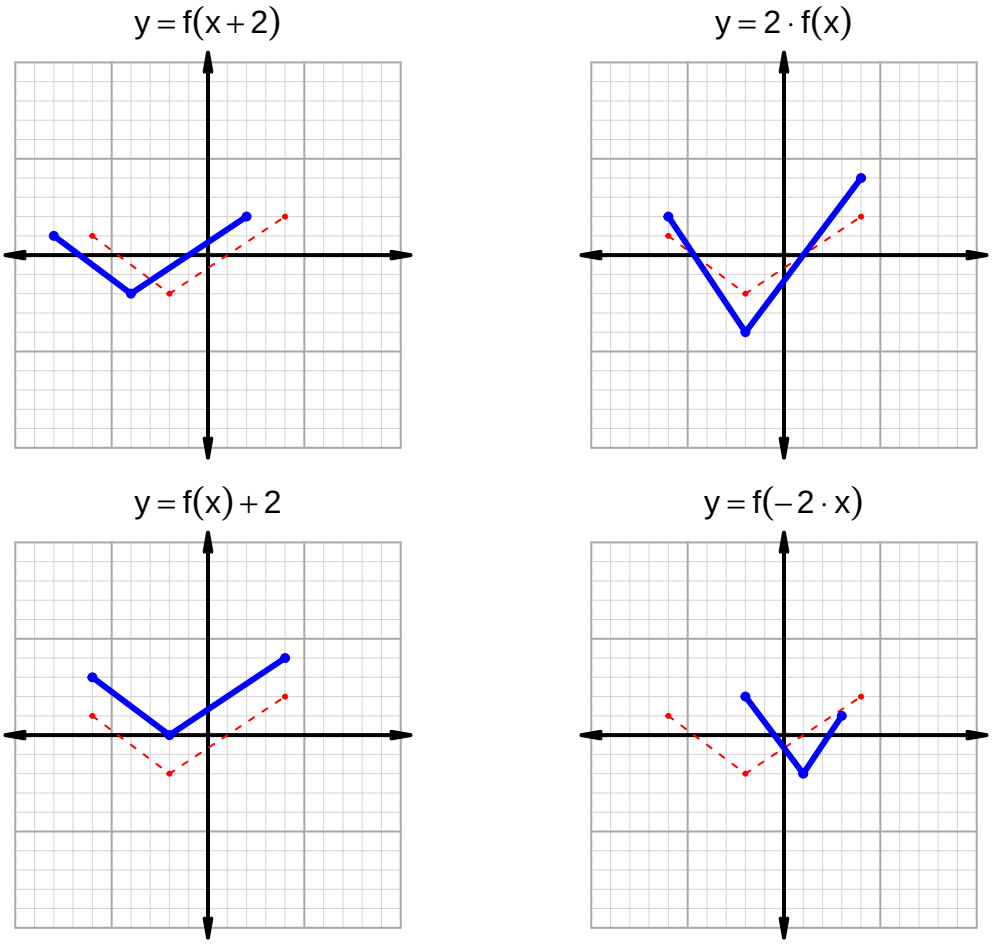
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 76$ and $x_2 = 94$. Express your answer as a reduced fraction.

x	$g(x)$
16	94
46	76
76	16
94	46

$\frac{f(94)-f(76)}{94-76} = \frac{46-16}{94-76} = \frac{30}{18}$

The greatest common factor of 30 and 18 is 6. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{5}{3}$$